FORM PTO-1449 (Equivalent) U.S. Department of Commerce Patent and Trademark Office

U.S. Application Serial No. 08/995,108

Atty. Docket No. AM 1776

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use several sheets if necessary)

Peijun Ding et al.
Applicants

December 19, 1997
Filing Date

Unknown
Group

U. S. PATENT DOCUMENTS

Examiner Initial	Document Number	Issue Date	Name	Class	Subclass	Filing Date If Appropriate
	5,281,485	01/25/94	Colgan et al.	428	457	
	5,676,587	10/14/97	Landers et al.	451	57	

FOREIGN PATENT DOCUMENTS

Examiner Initial	Document Number	Publication Date	Name	Class	Subclass	Translation If Appropriate
	EP 0 751 566 A2	01/02/97	Cabral, Jr. et al.	H01L	23/532	
	EP 0 570 205 A1	11/18/93	Yamamoto et al.	H01L	21/321	

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

Karen Holloway et al., "Tantalum as a Diffusion Barrier Between Copper and Silicon: Failure Mechanism and Effect of Nitrogen Additions", J. Appl. Phys. 71 (11), 1 June 1992, pp. 5433 - 5444.

Katsutaka Sasaki et al., "Stoichiometry of Ta-N Film and Its Application for Diffusion Barrier in the Al_3 Ta/Ta-N/Si Contact System", Japanese Journal of Applied Physics, Vol. 29, No. 6, June 1990, pp. 1043 - 1047.

E. M. Zielinski et al., "The Effects of Processing on the Microstructure of Copper Thin Films on Tantalum Barrier Layers", Mat. Res. Soc. Symp. Proc. Vol. 391, (1995,) pp 303 - 308.

PCT International Search Report dated 25/03/1999

Examiner Date Considered 8/30/99

Examiner: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

attach #2

FORM PTO-1449 (Equivalent) U.S. Department of Commerce Patent and Trademark Office

U.S. Application Serial No. 08/995,108

Atty. Docket No. AM-1776

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use several sheets if necessary)

Peijun Ding et al.
Applicants

December 19, 1997
Filing Date

Group

U. S. PATENT DOCUMENTS

Examiner Initial	Document Number	Issue Date	Name	Class	Subclass	Filing Date If Appropriate
	4,319,264	03/09/82	Gangulee et al.	357	71	
	5,186,718	02/16/93	Tepman et al.	29	25.01	
	5,236,868	08/17/93	Nulman	437	190	
	5,320,728	06/14/94	Tepman	204	192	
	5,571,752	11/05/96	Chen et al.	437	189	

FOREIGN PATENT DOCUMENTS

Examiner Initial	Document Number	Publication Date	Name	Class	Subclass	Translation If Appropriate

Examiner 2/15/02 Date Considered

Examiner: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

Gang Bai et al., "Copper Interconnection Deposition Techniques and Integration", 1996 Symposium on VLSI Technology, Digests of Technical Papers (0-7803-3342-X/96, IEEE).

S. M. Rossnagel and J. Hopwood, "Metal ion deposition from ionized magnetron sputtering discharge", *J. Vac. Sci. Technol.* B, Vol. 12, No. 1, pp. 449 - 453 (Jan/Feb 1994).

S. M. Rossnagel et al., "Thin, high atomic weigiht refractory film deposition for diffusion barrier, adhesion layer, and seed layer appplications", *J. Vac. Sci. Technol.* B, Vol. 14, No. 3, pp. 1819 - 1827 (May/Jun 1996).

C. Steinbruchel, "Patterning of Copper for Multilevel Metallization: Reactive Ion Etching and Chemical-Mechanical Polishing", *Applied Surface Science,* 91, pp. 139-146 (1995).

U.S. Patent Application Serial No. 08/824,911, of Ngan et al., filed March 27, 1997.

U.S. Patent Application Serial No. 08/863,451, of Chiang et al., filed May 27, 1997.

U.S. Patent Application Serial No. 08/924,487, of Ngan et al., filed August 23, 1997.

Examiner Date Considered 2/15/02

Examiner: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.